SIEMENS

SIREMOBIL Compact

SP

System Manual

Installation Instructions

CODONICS Printer EP 1660

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Chapter	Page	Revision
1	all	01
2	all	01
3	all	01
4	all	01
5	all	01

Page

1 General 1 - 1

Safety notes . . . 1 - 1
Required documents . . . 1 - 1
Required measuring equipment . . . 1 - 1
Required tools . . . 1 - 1

2 Installation 2 - 1

With prepared monitor trolley (new delivery) . . . 2 - 1
Requirements . . . 2 - 1
Unpacking the printer . . . 2 - 1
Unpacking the framegrabber . . . 2 - 2
Installing the framegrabber in the monitor trolley . . . 2 - 2
Installation of the printer in the monitor trolley . . . 2 - 3
Attaching the power chain . . . 2 - 3
Wiring the hand-held control unit . . . 2 - 4
Wiring the printer . . . 2 - 4
Wiring the framegrabber . . . 2 - 5
Wiring the framegrabber video cable . . . 2 - 5
Power switch . . . 2 - 5
Installation when upgrading in the field . . . 2 - 6
Replacing fuse F5 . . . 2 - 6
Checking or replacing fuse F5 . . . 2 - 6
Installation of the guide rails, including the fan, and the installation plate of the framegrabber in the monitor trolley . . . 2 - 7
Unpacking the printer . . . 2 - 8
Unpacking the framegrabber . . . 2 - 8
Installing the framegrabber in the monitor trolley . . . 2 - 9
Installation of the printer in the monitor trolley . . . 2 - 10
Attaching the power chain . . . 2 - 10
Wiring the hand-held control unit . . . 2 - 11
Wiring the printer . . . 2 - 11
Wiring the fans . . . 2 - 11
Wiring the framegrabber . . . 2 - 12
Wiring of the framegrabber video cable . . . 2 - 12
Power switch . . . 2 - 13
Replacing the rear cover of the monitor trolley . . . 2 - 13

3 Commissioning 3 - 1

Inquiry regarding customer requirements . . . 3 - 1
Image polarity . . . 3 - 1
Film segmentation . . . 3 - 1
Startup of the printer / framegrabber . . . 3 - 2
Programming . . . 3 - 2
Setting the date and time . . . 3 - 2
Film segmentation . . . 3 - 2
Enabling the Framegrabber Service Modes . . . 3 - 3

Page

Programming the external exposure release . . . . . 3 - 3
MEMOSKOP Video singals at hardcopy output . . . . . 3 - 4
Read out of the actual video frequency . . . . . 3 - 4
Memoskop SMPTE test image selection . . . . . 3 - 4
Automatic sizing with existing 50/60 Hz monitors . . . . . 3 - 6
Programming the film type on the printer . . . . . 3 - 6
Testing the image quality . . . . . 3 - 7
Final work . . . . . 3 - 9

Safety notes

The product-specific safety notes specified in the system manual and the safety notes specified in ARTD Part 2 must be observed.

After all work has been completed and after all covers have been fitted, the protective conductor test must be carried out in accordance with ARTD-002.731.17. The protective conductor resistance must not exceed 0.2 Ohms.

Required documents

- Operating Instructions Codonics Printer / Framegrabber
- System Folder for Basic Unit

Required measuring equipment

- Densitometer X-RITE 331 97 02 416 Y1996
- Protective conductor meter 44 15 899 RV090
  or
- Bender safety tester 99 00 440 RE999

Required tools

- Tool kit
- 1 set of Allen keys
- 1 set of torque screwdrivers

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Fig. 1

With prepared monitor trolley (new delivery)

Requirements

- The mounting plates for the framegrabber are already fitted in the monitor trolley.
- The guide rails for the printer, including the fan, are already fitted in the monitor trolley.
- The cables for the video printer are already installed in the monitor trolley.

Unpacking the printer

- Turn the box with the printer upside down and open the bottom of the box.
- Remove the foam material.
- Remove the plastic bag.
- Unscrew the wooden base plate.
- Lift the printer carefully out of the box and place it on the floor in the upright position.
- Turn the two transport locks into vertical position and pull out in vertical position (Fig. 1).

NOTICE	**Keep the two transport locks. If the printer needs to be replaced or sent in, the transport locks must be re-inserted.**

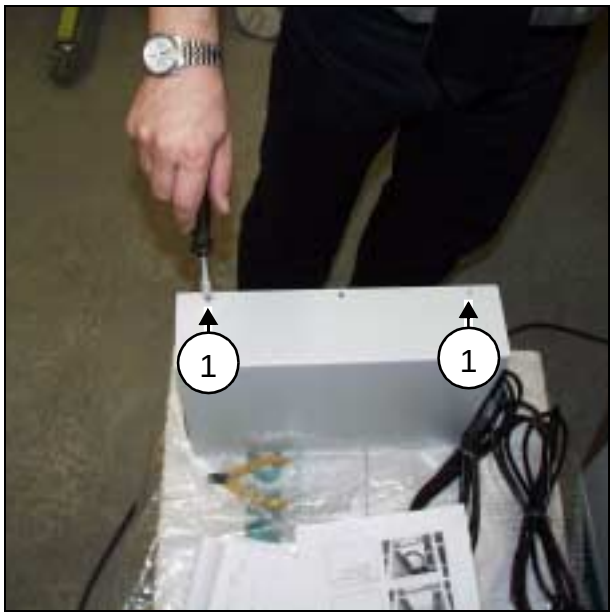

Fig. 2

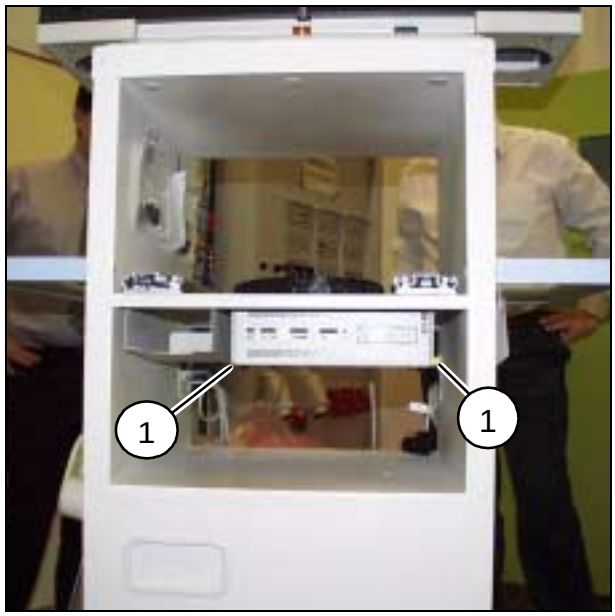

Fig. 3

Unpacking the framegrabber

- Open the packaging of the framegrabber from the top.
- Remove the framegrabber and the hand-held control unit.
- Remove the plastic bag.

Installing the framegrabber in the monitor trolley

- Remove the large rear cover from the monitor trolley.
- Remove the framegrabber from the packaging.
- Remove the front and rear screws on both sides of the framegrabber cover (1/Fig. 2).
- Insert the framegrabber from the front in the fixing bracket and secure laterally to the fixing bracket with the lock washers and knurled screws supplied(1/Fig. 3).
- The fan and the connections of the framegrabber point to the rear.

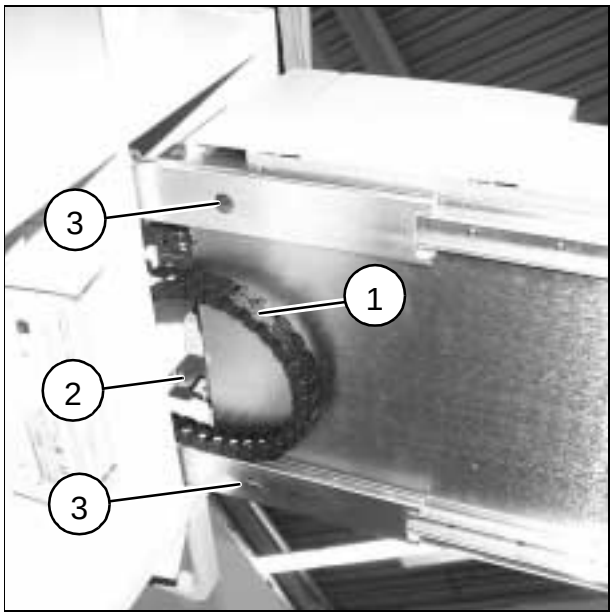

Fig. 4

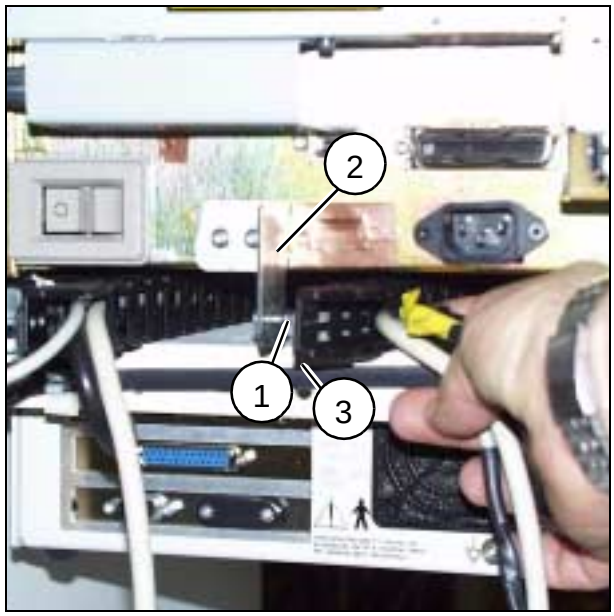

Fig. 5

Installation of the printer in the monitor trolley

NOTICE	**One person should hold the printer to make sure it does not fall, while a second person tightens the screws.**

- Pull out the two guide rails completely to the front.
- Place the printer on the two guide rails.
- Fig. 4 shows the two drawn-out guide rails with the attached printer from below.
- Place the power chain (1/Fig. 4) in a semicircle around the angle bracket (2/Fig. 4).
- Secure the printer to the rails with the 12 screws supplied.
- The 3 rear threads on each of the rails can be accessed by pushing the printer through the openings (3/Fig. 4).
- Push the printer all the way into the monitor trolley and at the same time guide the power chain through to the rear.

Attaching the power chain

- Attach the bracket (2/Fig. 5) at the printer with two screws.
- Unscrew the two screws (1/Fig. 5) from the angle bracket (2/Fig. 5).
- Attach the power chain (3/Fig. 5) to the bracket (2/Fig. 5) with the two screws (1/Fig. 5).

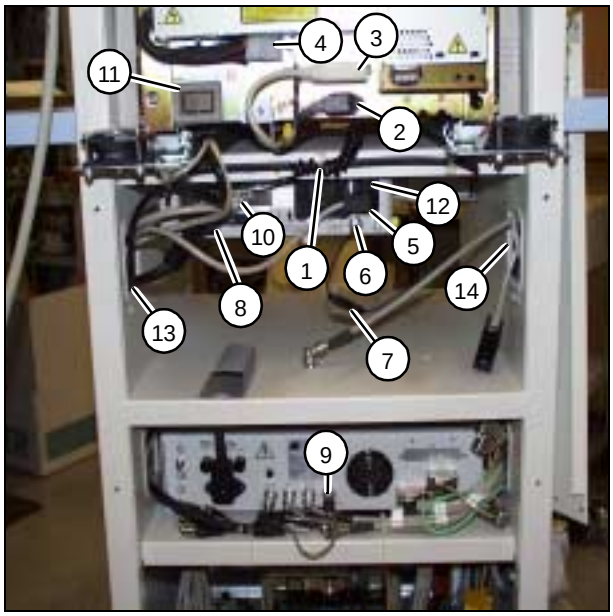

Fig. 6

Wiring the hand-held control unit

- Guide the connector of the hand-held control unit from the front between the left attachment rail and the power chain (as seen from the front) through to the rear.
- Attach the connector of the hand-held control unit to the 9-pin SUB-D "HAND CTRL" socket and secure it with screws.
- Run the cable from the hand-held control unit to the cable holder (1/Fig. 6) and secure it with a cable tie.

Wiring the printer

- Insert the connector from the power cable in the power socket of the printer (2/Fig. 6).
- The other end of the power cable is already connected to the ON/OFF assembly, terminal block X2.1, X2.2 and the protective conductor terminal.
- Insert the control cable in the printer socket and lock mechanically (3/Fig. 6).
- Insert the power supply for the fans in the socket (4/Fig. 6).

Wiring the framegrabber

- The power cable is already installed in the monitor trolley and has been connected.
- Insert the connector from the power cable in the power socket of the framegrabber (5/Fig. 6).
- Connect the adapter cable (3.5mm remote jack - BNC connector) from the remote control to the BNC socket "B&W" and lock (6/Fig. 6).
- Connect the 3.5 mm jack at the other end of the adapter cable to the 3.5 mm remote connector (7/Fig. 6). (Remove the heat shrink before)
- One end of the printer control cable is already connected to the printer. The printer control cable is fed to the framegrabber via the power chain and has a 25-pin SUB-D connector at the second cable end.
  Connect the 25-pin SUB-D connector to the "PRINTER" socket of the framegrabber (10/Fig. 6).

Wiring the framegrabber video cable

NOTICE

The framegrabber is equipped with a 75-ohm terminating resistor which cannot be disconnected. If additional video components, e.g. a video printer or video recorder, are present, the framegrabber must always be wired as the last video component.

- Connect one end of the video cable to the 15-pin SUB-D socket of the framegrabber (8/Fig. 6).
- With no additional video components present, e.g. a video recorder:
  Run the other end of the video cable through the duct (14/Fig. 6) to the MEMOSKOP.
  Plug the BNC connector to the "OUT3" socket of the MEMOSKOP and lock.
- With video recorder present:
  Run the other end of the video cable to the video recorder.
- Connect the BNC connector to the looped-through output of the video recorder and lock.
- The 75-ohm terminator on the video recorder must be disconnected or unplugged.

Power switch

- Switch on power to the printer (11/Fig. 6).
- Switch on power to the framegrabber (12/Fig. 6).
- Load the film cassette with film screens and insert in the printer.
- Additional steps: see Startup section.

Installation when upgrading in the field

WARNING **The system must be isolated from the power supply before beginning work. Unplug the power connector for the system from the power socket!**

Replacing fuse F5

Requirements

- The system must be isolated from the power supply. Unplug the power connector from the power socket.
- Open the rear cover of the monitor trolley.

Checking or replacing fuse F5

- Check the value of fuse F5 on board D50 of the ON/OFF assembly (installed in the bottom shelf of the monitor trolley).
- If a 4 AT fuse is fitted, replace it with the 6.25 AT fuse supplied.
- On board D50, stick the label (6.25 AT) supplied on top of the fuse label (4 AT).
- Manually change the fuse value of the F5 fuse to 6.25 AT in the wiring diagram.
- Enter the remark "Condonics printer installed" together with the date and your initials.

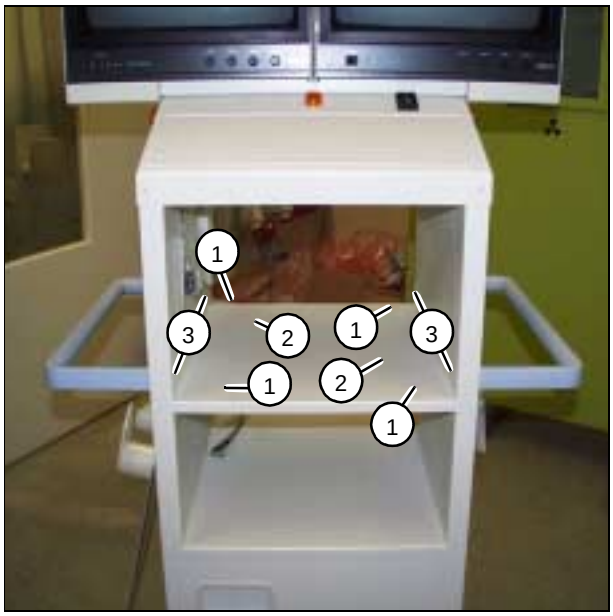

Fig. 7

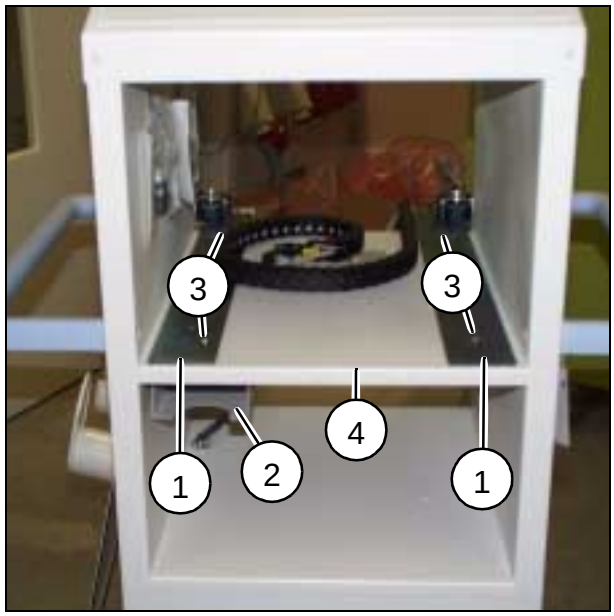

Fig. 8

Installation of the guide rails, including the fan, and the installation plate of the framegrabber in the monitor trolley

NOTICE	**A second person is required here.**

- Remove the dummy covers from the drill holes (1, 2, 3/Fig. 7).
- Place the two fan plates (1/Fig. 8) on the shelf (4/Fig. 8) of the monitor trolley. The installation holes for the two fan plates (1/Fig. 8) are exactly above the drill holes (1/Fig. 7).
- Press the installation plate for the framegrabber (2/Fig. 8) from below against the shelf (4/Fig. 8). The threaded holes of the installation plate are also exactly below the drill holes (1/Fig. 7).
- Attach both fan plates (1/Fig. 8) to the installation plate of the framegrabber (2/Fig. 8) with the 4 screws. Lock washers are not required, since the screws supplied are coated with Loctite.
- Place the two guide rails (Fig. 9) on the two plates (1/Fig. 8).
- The rails can be pulled out towards the front.
- The attachment holes of the guide rails are exactly above the threaded holes of the plates (1/Fig. 8).
- Secure the guide rails to the plates with 8 screws (Fig. 9).
- Lock washers are not required, since self-locking nuts are attached to the mounting plate.
- The front screw holes can be accessed by pulling out the rails (Fig. 9).

Fig. 9

Fig. 10

Unpacking the printer

- Turn the box with the printer upside down and open the bottom of the box.
- Remove the foam material.
- Remove the plastic bag.
- Unscrew the wooden base plate.
- Lift the printer carefully out of the box and place it on the floor in the upright position.
- Turn the two transport locks into vertical position and pull out in vertical position (Fig. 10).

NOTICE	**Keep the two transport locks. If the printer needs to be replaced or sent in, the transport locks must be re-inserted.**

Unpacking the framegrabber

- Open the packaging of the framegrabber from the top.
- Remove the framegrabber and the hand-held control unit.
- Remove the plastic bag.

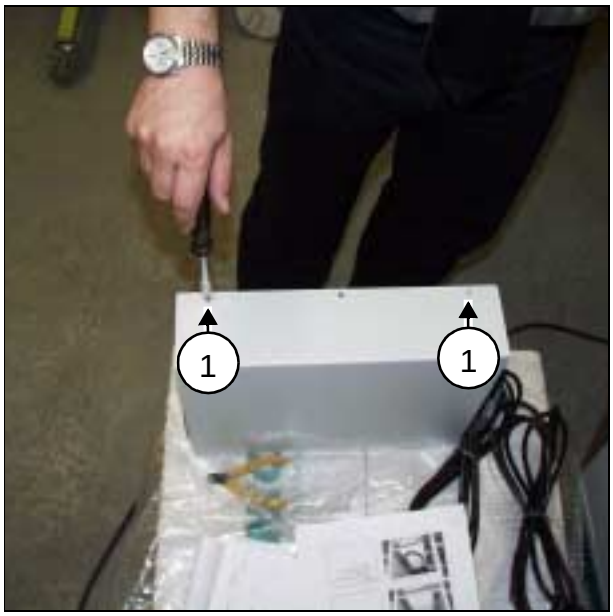

Fig. 11

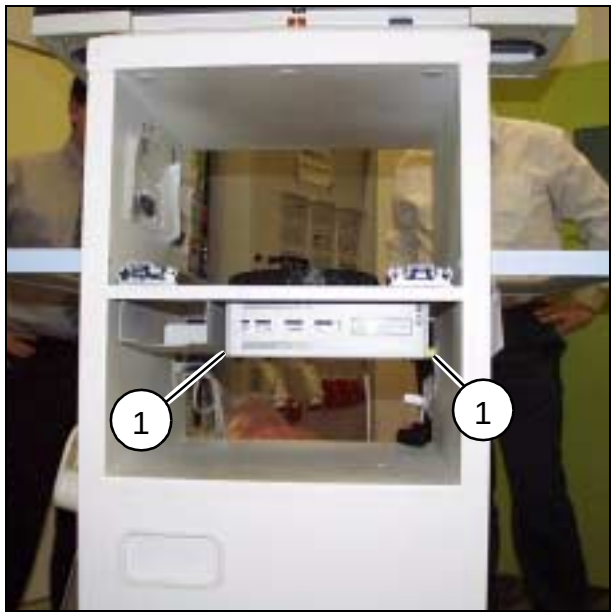

Fig. 12

Installing the framegrabber in the monitor trolley

- Remove the framegrabber from the packaging.
- Remove the front and rear screws on both sides of the framegrabber cover (1/Fig. 11).
- Insert the framegrabber from the front in the fixing bracket and secure laterally to the fixing bracket with the lock washers and knurled screws supplied(1/Fig. 12).
- The fan and the connections of the framegrabber point to the rear.

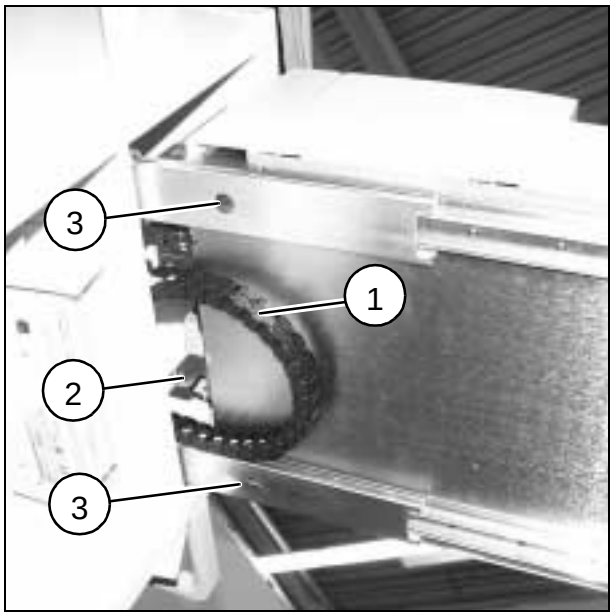

Fig. 13

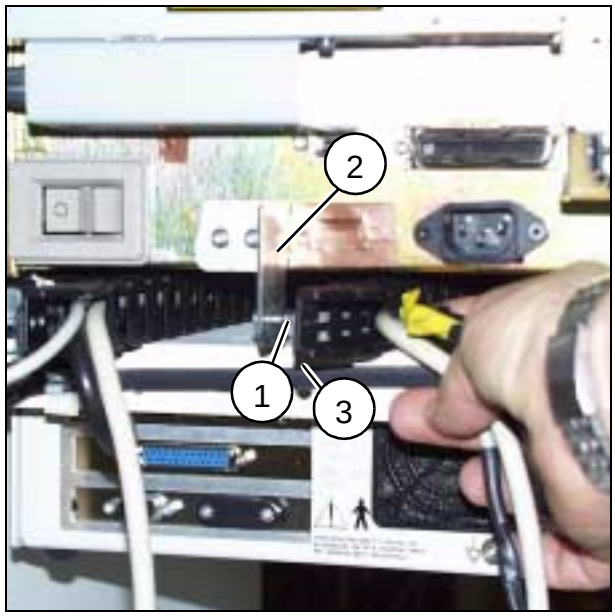

Fig. 14

Installation of the printer in the monitor trolley

NOTICE	**One person should hold the printer to make sure it does not fall, while a second person tightens the screws.**

- Pull out the two guide rails completely to the front.
- Place the printer on the two guide rails.
- Fig. 13 shows the two drawn-out guide rails with the attached printer from below.
- Place the power chain (1/Fig. 13) in a semicircle around the angle bracket (2/Fig. 13).
- Secure the printer to the rails with the 12 screws supplied.
- The 3 rear threads on each of the rails can be accessed by pushing the printer through the openings (3/Fig. 13).
- Push the printer all the way into the monitor trolley and at the same time guide the power chain through to the rear.

Attaching the power chain

- Attach the bracket (2/Fig.14) to the printer with two screws.
- Unscrew the two screws (1/Fig. 14) from the angle bracket (2/Fig. 14).
- Attach the power chain (3/Fig. 14) to the bracket (2/Fig. 14) with the two screws (1/Fig. 14).

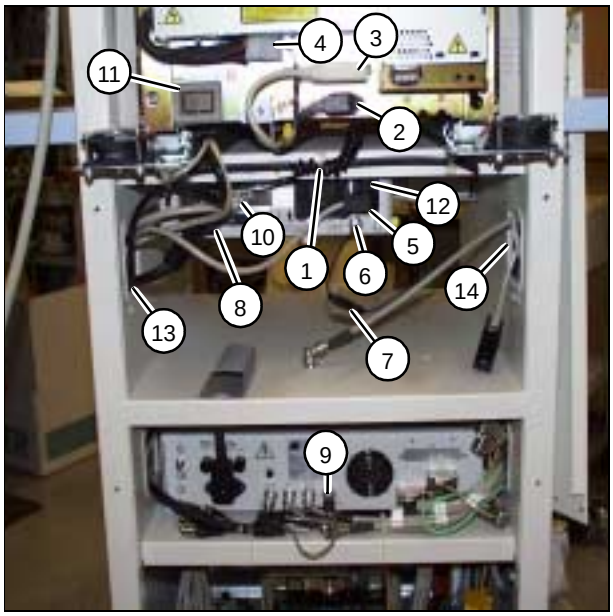

Fig. 15

Fig. 16

Wiring the hand-held control unit

- Guide the connector of the hand-held control unit from the front between the left attachment rail and the power chain (as seen from the front) through to the rear.
- Attach the connector of the hand-held control unit to the 9-pin SUB-D "HAND CTRL" socket and secure with screws.
- Run the cable of the hand-held control unit to the cable holder (1/Fig. 15) and secure it.

Wiring the printer

- Run the end of the power cable with the free cable ends from the power chain to the lateral duct (13/Fig. 15) up to the ON/OFF assembly.
- Connect the two ends (bn and bl) of the power cable to terminal blocks X2.1 and X2.2.
- Connect the protective conductor (ye/gn) of the power cable to the protective conductor terminal.
- Insert the connector from the power cable in the power socket of the printer (2/Fig. 15).
- Insert the control cable in the printer socket and lock mechanically (3/Fig. 15).

Wiring the fans

- Remove the cover (1Fig. 16) (3 screws).
- Insert the power supply for the fans in the socket (4/Fig. 15).
- Reattach the cover (1/Fig. 16).
- Plug in the two connectors of the fan wires to the corresponding connectors (2/Fig. 16).
- Lock the fan wires with the cable holders (3/Fig. 16).

Wiring the framegrabber

- Run the end of the power cable with the free cable ends from the framegrabber to the lateral duct (13/Fig. 15) up to the ON/OFF assembly.
- Connect the two ends (bn and bl) of the power cable to terminal blocks X2.1 and X2.2.
- Connect the protective conductor (ye/gn) of the power cable to the protective conductor terminal.
- Insert the connector from the power cable in the power socket of the framegrabber (5/Fig. 15).
- Run the end of the remote cable (7/Fig. 15) from the framegrabber to the MEMOSKOP.
- Connect the 9-pin SUB-D connector to the MEMOSKOP "Printer" socket and secure with screws.
- Connect the adapter cable for the remote control (3.5mm jack - BNC connector) to the "B&W" BNC socket and lock (6/Fig. 15).
- Connect the 3.5 mm jack at the other end of the adapter cable to the 3.5 mm remote connector (7/Fig. 15). Remove first the heat shrink.
- One end of the printer control cable is already connected to the printer. The printer control cable is fed to the framegrabber via the power chain and has a 25-pin SUB-D connector at the second cable end.
  Connect the 25-pin SUB-D connector to the "Printer" socket of the framegrabber (10/Fig. 15).

Wiring of the framegrabber video cable

NOTICE

The framegrabber is equipped with a 75-ohm terminating resistor which cannot be disconnected. If additional video components, e.g. a video printer or video recorder, are present, the framegrabber must always be wired as the last video component.

- Connect one end of the video cable to the 15-pin SUB-D socket "Video In" of the framegrabber (8/Fig. 15).
- With no additional video components present, e.g. a video recorder:
  Run the other end of the video cable through the right duct (14/Fig. 15) to the MEMOSKOP. Plug the BNC connector to the "OUT3" socket of the MEMOSKOP and lock.
- With video recorder or vidoe printer present:
  Run the other end of the video cable to the video recorder or video printer.
- Connect the BNC connector to the looped-through output of the video recorder or vidoeprinter and lock.
- The 75-ohm terminator on the video recorder or video printer must be disconnected or unplugged.

Power switch

- Switch on power to the printer (11/Fig. 15).
- Switch on power to the framegrabber (12/Fig. 15).
- Load the film cassette with film screens and insert to the printer.

Replacing the rear cover of the monitor trolley

- Unscrew the protective conductor of the existing rear cover of the monitor trolley.
- Unpack the new rear cover.
- Screw the protective conductor onto the new rear cover.
- If the new rear cover does not contain cable holders, unscrew the cable holders of the old rear cover and mount on new rear cover.

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Inquiry regarding customer requirements

NOTICE

The printer, including the framegrabber, is programmed ex works for positive image display with a refresh rate of 60 Hz and with text display for 100/120 Hz monitors.

With Memoskops that have no keyboard it is not possible to select negative image display. In this case, do not program for negative image display.

Image polarity

(Positive or negative image display)

Positive image display: Dark image contents on the live monitor are also displayed dark on the film during radiation.

Negative image display: Dark image contents on the live monitor are displayed light on the film during radiation.

The framegrabber / printer cannot change the image polarity and always displays the image according to the video input signal.

A negative image display can therefore only be achieved by changing the image polarity on the memoskop.

Please note:

The image quality of the framegrabber / printer is optimized ex works for positive image display on the Memoskop.

Fixed programming for negative image display is only possible with Memoskop SUB or SUB & MOD for stored subtraction scenes.

With all other Memoskop memories, negative image display must be activated by the customer each time after switching on the equipment by simultaneously pressing "CTRL" + "R".

With Memoskops that have no keyboard, changeover is therefore not possible.

- We recommend using positive image display.
  If the customer explicitly requires negative image display, programming according to the "Viedo frequency and image polarity" section must be carried out additionally during commissioning.
- Make a note of the customer requirements.

Film segmentation

- The following film segmentations can be programmed on the framegrabber / printer: Full format, 2-on-1, 3-on-1, 4-on-1 and 6-on-1 segmentation.
- Enquire with the customer as to the preferred film segmentation and make a note of it.

Startup of the printer / framegrabber

- Plug the power connector from the monitor trolley to the power socket.
- Switch on the system (the power switches for the framegrabber and the printer must both be ON).
- Wait until the framegrabber / printer has completed the startup and the printer display shows "Ready".
- Programming can now be carried out.

Programming

Setting the date and time

- Check the date and time on the display of the control panel.
- If required, press the "Menu" key on the control panel.
- Select the "Miscellaneous" menu line with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- Select the "Set Date/Time" menu line with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- The date format, as well as the date and time, can now be changed.
- Selected menus can be closed again with the "Erase/Cancel" key. Changes of values/ parameters previously confirmed by "OK/Enter" are taken over.
- Press the "Menu" key to return to the main menu.

Film segmentation

- Press the "B&W SETTINGS" key on the control panel.
- Select the "FORMAT" menu line with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- Select the preferred film segmentation with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- Selected menus can be closed again with the "Erase/Cancel" key. Changes of values/ parameters previously confirmed by "OK/Enter" are taken over.
- Press the "Menu" key to return to the main menu.

Enabling the Framegrabber Service Modes

- Press the "OK/Enter" key on the control panel. The control panel displays the main menu.
- Press the "Erase/Cancel" key on the control panel 4 times.
- Press the "Color Capture / Time" key on the control panel once. The display shows "Key not supported...".
- Press the "OK/Enter" key on the control panel.
- Press the "Menu" key on the control panel.
- Select the "Installation" menu line with the cursor key "↑" or "↓" and press the "OK/Enter" key.

NOTICE	**If the installation menu cannot be selected, press the OK/Enter key again and follow the instructions above under "Enabling the Framegrabber Service Modes". The installation menu remains enabled and selectable until the framegrabber is switched off.**

Programming the external exposure release

To enable the framegrabber to evaluate the print key on the Memoskop and SIREMOBIL basic unit and to print an image, this function must be programmed.

- The "Installation" menu is already selected. See "Enabling the Framegrabber Service Modes".
- If not, select the "INSTALLATION" menu line with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- Select the "Exam ID Config" menu line with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- Select the "Auto Date/Time" menu line with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- Press the "Menu" key to select the main menu again.

MEMOSKOP Video singals at hardcopy output

Default programming: Without pressing the Hardcopy key at the unit, the image from the live monitor is transferred to the Memoskop video output OUT3. With pressing the Hard-copy key at the unit, for a short time, the image from the live monitor is transferred to the Memoskop video output OUT3.
Changes can be performed according to the description in the help file of the Memoskop.

NOTICE

The default programmings lead to the following effect:

With the release of the film print, using the hardcopy keys of the unit, the image of the reference monitor will be printed.

With the release of the film print, using the hand-held control of the framegrabber, the image of the live monitor will be printed.

Read out of the actual video frequency

- Read out the programmed video frequency on the MEMOSKOP and note down.
  - Call up the Technical Setup if a MEMOSKOP keyboard is available. For this, simultaneously press the CTRL + T keys and enter the password.
    Read out the video frequency in the Video Frequency line and note down. Do not close the Technical Setup yet.
  - If no keyboard is available, connect the Service PC to the system and start the MEMOSKOP service program.
  - In the main menu, press the "Get from Memoskop" button. Call up the "Others" menu, read out the video frequency and note down. Do not exit the Technical Setup yet.

Memoskop SMPTE test image selection

- Select LUT 1 for both monitors on the MEMOSKOP keyboard or on the basic unit.
- Call up the SPMPTE test image on the MEMOSKOP.
  - If a MEMOSKOP keyboard is available, call up the SPMPTE test image in the User Setup and display on both monitors.
  - If no keyboard is available, select the menu "Test" and select "SMPTE" in the service program.
  - Then click the "Put to Memoskop" button in the main menu of the service program. The SMPTE test image is displayed on both monitors.
- If a MEMOSKOP keyboard is available, switch on the text overlay.

Video frequency and image polarity

NOTICE	**Do not perform for 60Hz video frequency and preferred positive image display (factory default settings)**

- Press the "Menu" key on the control panel.
- Select the "Installation" menu line with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- Select the "Select/Setup Host" menu line with the cursor key "↑" or "↓" on the control panel of the framegrabber and press the "OK/Enter" key.
- Select the line "SIEMENS" with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- 4 selection menus are available:

Menu	Video frequency	Image polarity	Description
Siremobil C NTSC	60 Hz or 120 Hz	Positive	Factory setting
Siremobil C PAL	50 Hz or 100 Hz	Positive	for 50 Hz or 100 Hz select refresh rate and positive image display
Siremobil NEG 60	60 Hz or 120 Hz	Negative	for 60 Hz or 120 Hz select refresh rate and negative image display
Siremobil NEG 50	50 Hz or 100 Hz	Negative	for 50 Hz or 100 Hz select refresh rate and negative image display

- Select the appropriate line with the cursor key "↑" or "↓" and press the "OK / Enter" key.

Automatic sizing with existing 50/60 Hz monitors

NOTICE

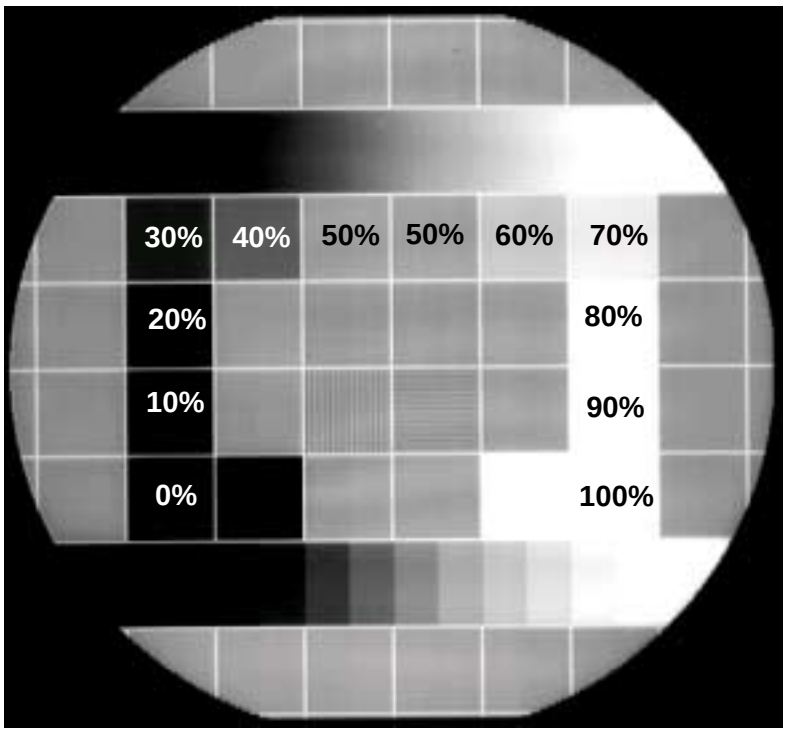
Carry out only with existing 28 44 376 X2183 monitors.
In the supply state of the framegrabber, the geometric dimensions are optimized for monitor output signals of 100 or 120 Hz. With existing 28 44 376 X2183 monitors with refresh rates of 50 Hz or 60 Hz, the text overlay is not fully displayed on the film.
For corrections, automatic sizing of the framegrabber must be carried out in these cases.

- Select the"INSTALLATION" menu line with the cursor key "↑" or "↓" and press the "OK / Enter" key.
- Select the "Select/Setup Host" menu line with the cursor key "↑" or "↓" on the control panel of the framegrabber and press the "OK/Enter" key.
- Select the line "SIEMENS" with the cursor key "↑" or "↓" and press the "OK/Enter" key.
- Select the correct videofrequency and polarits (see above) with the cursor key "↑" or "↓" and press the "OK / Enter" key. The actual programmed value is marked with "*****" at the beginning of the line.
- Select the"Automatic Sizing" menu line with the cursor key "↑" or "↓" and press the "OK / Enter" key.
- Confirm the "Automatic Sizing Proceed?" query with the "OK / Enter" key.
- Press the "Menu" key to select the main menu again.

Programming the film type on the printer

- Insert the film supplied in the film compartment of the printer.
  Program the film type.
  See operating instructions, section "Loading DirectVista Media".

Testing the image quality

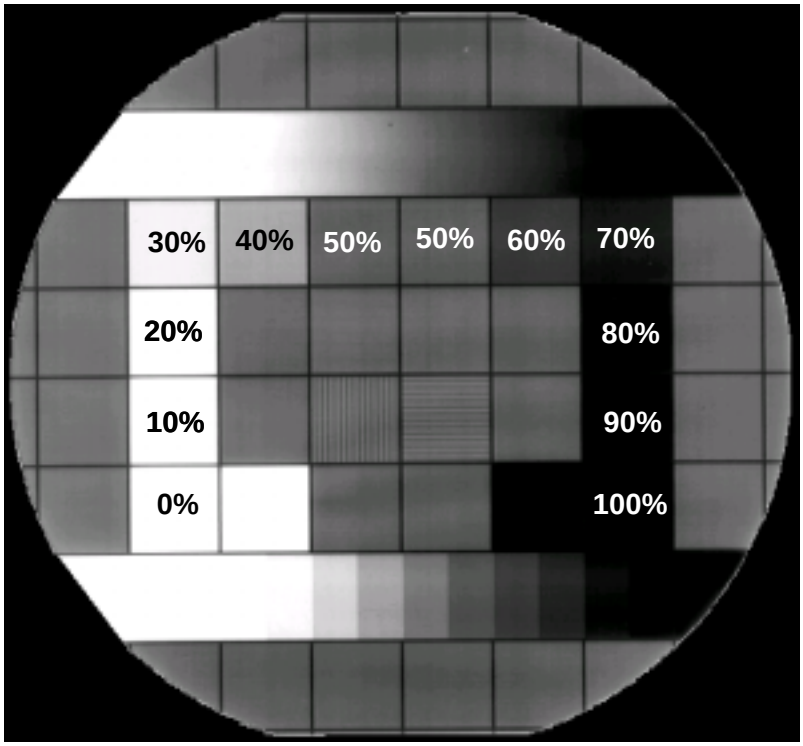


SMPTE test image on the monitor (positive image display)

- The SMPTE test image is still displayed on both monitors. If not, call up as described above.
- With programmed positive image display, expose a film and measure the density in the fields 0%, 40% and 100%, enter in Table 1 and compare with the reference values below.

Gray scale	Minimum density	Nominal density	Maximum density	Actual values
0%	2.7	2.9	3.1	
10%	2.1	2.28	2.46	n.a.
20%	1.64	1.81	1.98	n.a.
30%	1.33	1.48	1.63	n.a.
40%	1.06	1.2	1.34	
50%	0.84	0.96	1.08	n.a.
60%	0.65	0.75	0.85	n.a.
70%	0.48	0.57	0.66	n.a.
80%	0.34	0.41	0.48	n.a.
90%	0.22	0.28	0.34	n.a.
100%	0.16	0.2	0.24	

Table 1: Reference values with programmed positive image display



SMPTE test image on the monitor (negative image display)

- With programmed negative image display, expose a film and measure the density in the fields 0%, 40% and 100%, enter in Table 2 and compare with the reference values below.

Gray scale	Minimum density	Nominal density	Maximum density	Actual values
0%	0.16	0.21	0.26	
10%	0.20	0.27	0.35	n.a.
20%	0.32	0.42	0.52	n.a.
30%	0.53	0.65	0.78	n.a.
40%	0.85	1.0	1.15	
50%	1.28	1.45	1.63	n.a.
60%	1.70	1.90	2.10	n.a.
70%	2.04	2.26	2.49	n.a.
80%	2.31	2.56	2.81	n.a.
90%	2.50	2.77	3.05	n.a.
100%	2.60	2.90	3.20	

Table 2: Reference values with programmed negative image display

Final work

- File the installation and configuration instructions in the system manual.
- Refit all covers.
- Carry out the protective conductor test in accordance with ARTD-002.731.17. The protective conductor resistance must not exceed 0.2 Ohms.
- Hand over the operating instructions to the customer.

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